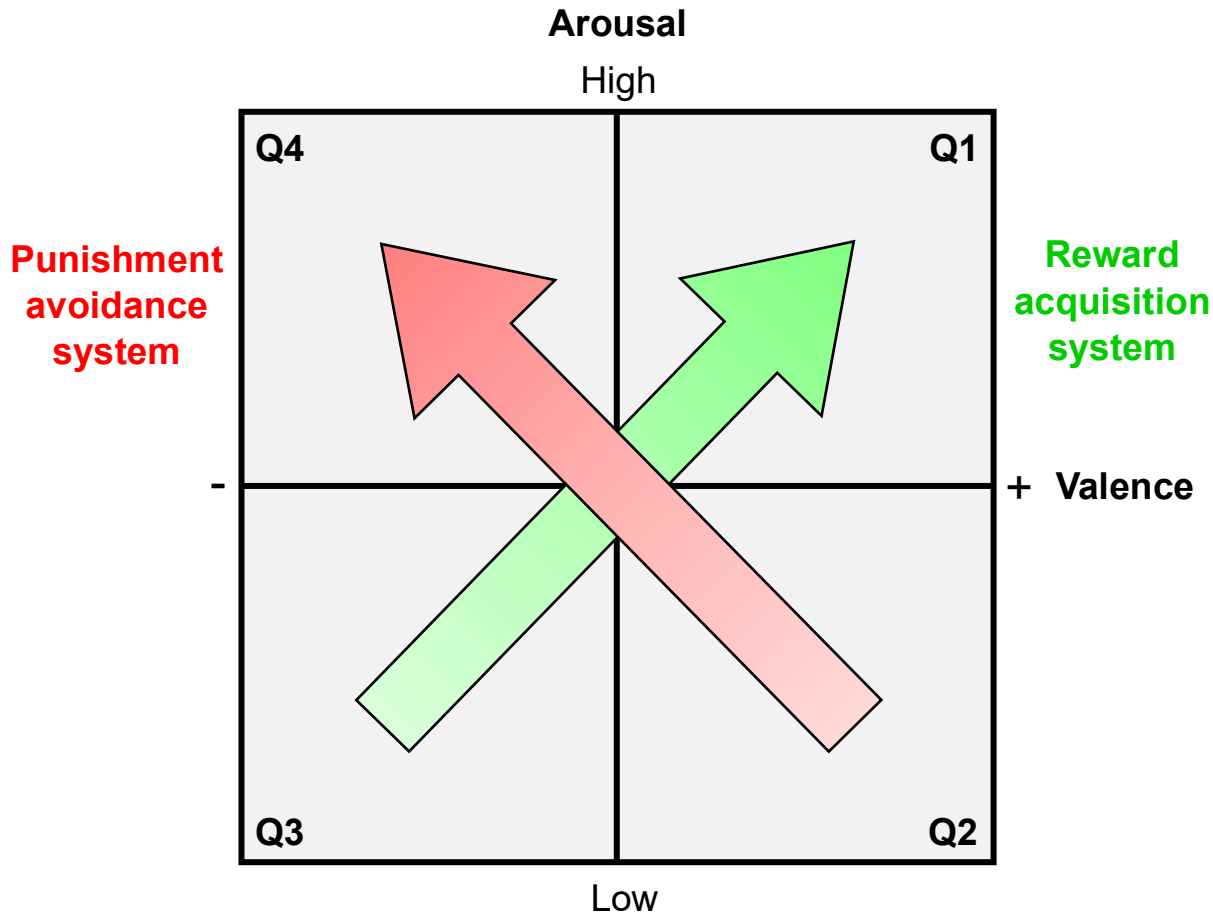

Figure 1. *Valence and arousal define affective states (grey box), which encompasses emotions and moods* [6]. *Moving from Q3-Q1 is increasingly appetitive; Q2-Q4 is increasingly aversive.*

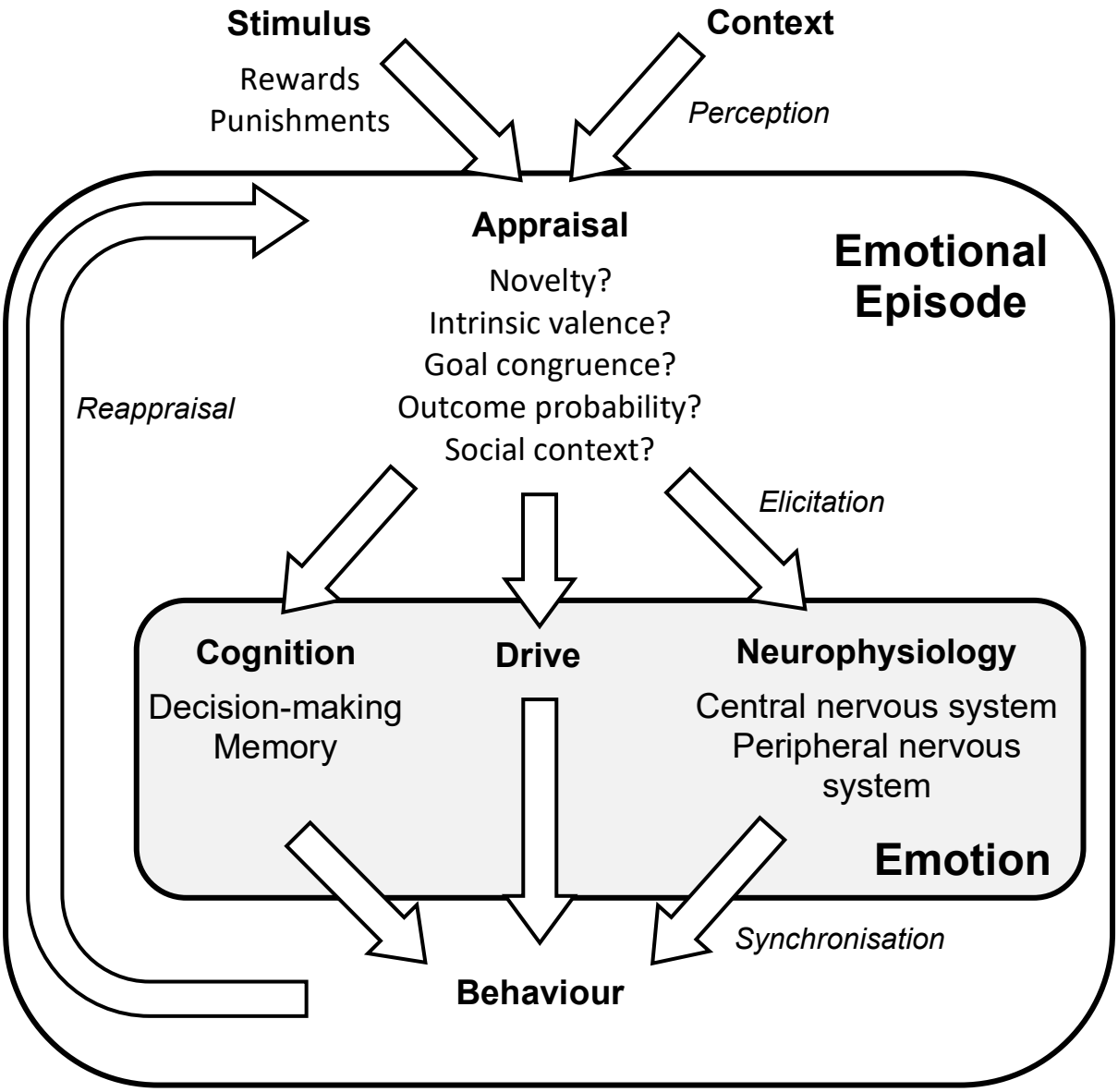

Figure 2. *An emotional episode (white box). Appraisals of stimuli, their context, and their personal significance elicit the emotion (grey box), whose components include cognition, drive, and neurophysiology. These components govern the expression of behaviour. Conscious "feelings" are another potential component, but not essential.*

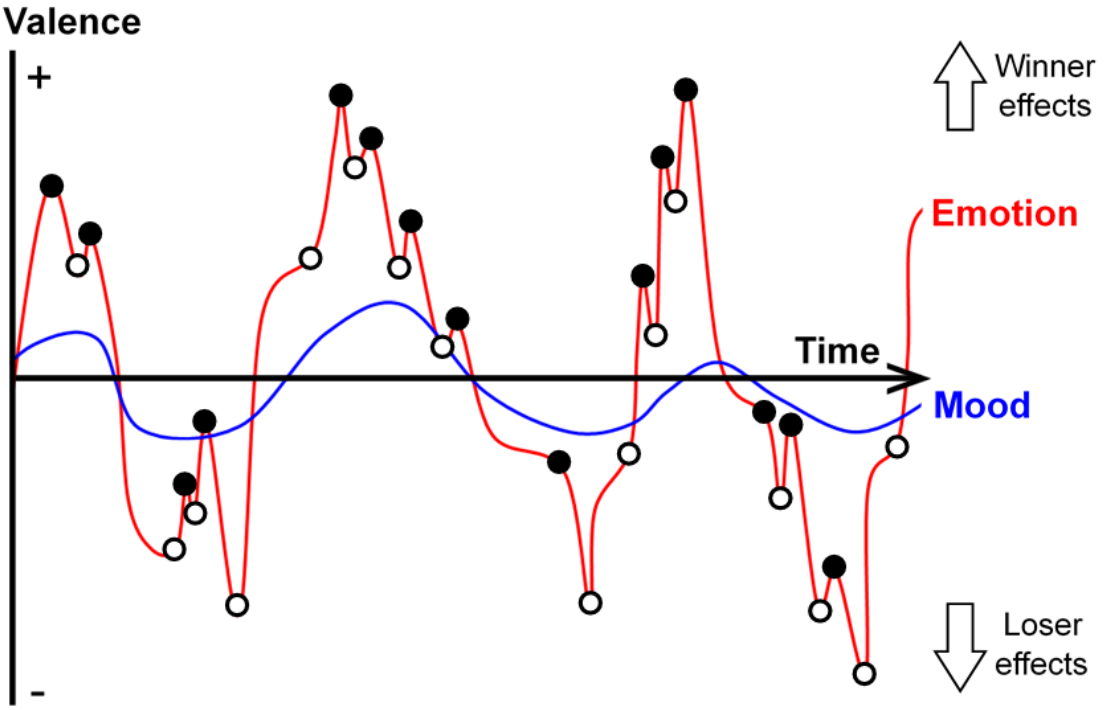

Figure 3. *Cumulative emotional valence determines mood* [11] *(manifested in aggression). Considering only integral (objectively contest-relevant) influences, white dots are wins and black dots are losses. Considering both integral and incidental (objectively contest-irrelevant) influences, white dots are rewards and black dots are punishments.*

Table 1. *Major predictions and outstanding questions that arise from applying emotion theory to animal contests*

Major Predictions	Outstanding Questions
Contest appraisals cover more variables than traditionally recognised (i.e. RV and RHP)	Are contest appraisals sequential? Do untested human appraisals modify contest dynamics?
Positive affective states induce self-assessment; negative states induce mutual assessment	Do assessment strategies vary with affective state? How might this influence the outcome?
Winner effects are associated with optimistic responses to judgement bias tasks; loser effects are associated with pessimistic responses	What neurocognitive mechanisms underpin judgement bias? Are they equivalent to the mechanisms underpinning winner/loser effects
Incidental affective influences modify contest behaviour	Do incidental affective states commonly impact contests in nature? Why evolve a generalised (rather than domain-specific) affective system?
Humans and animals share rules that increase the likelihood of incidental influences (e.g. concurrence, ambiguity, and link to moods)	What mechanisms minimise incidental influences? How do these affect fitness?
The above predictions apply only to animals with a central nervous system	Do all animals with a central nervous system have affective states? Are contest dynamics fundamentally different in organisms without a central nervous system?